RouteMapper

Create a new project called RouteMapper*, where the asterisk is replaced by your last name. When you complete this project, generate the "Share" link through Thunkable, and submit it on TEAMS as a comment. If you work in Android Studio or XCode, zip up everything associated with the project and submit that.

In this project, you will create an app similar to the 'Map My Run' feature available online, where a user can select locations on a route they've taken and determine total distance traveled, as well as view their route on a map. As an added bonus, this app can be used in real-time—users will click a button to indicate a turn on their route, thus updating the visible route accordingly. In general, **the layout of the user interface is up to you**, but the purposes of this assignment are to familiarize yourself with some of the more advanced Map components and functions, incorporate a Location Sensor, and make efficient use of lists.

I will be looking for a few general requirements:

- Include the 'Start' or 'Open' method code for Screen1. On this block, write a comment outlining the key functions of your app, "extra" behavior you've included, and any limitations still be present

- Ensure your app's components have sensible names for what they are (for example, scoreText is a better name than Label1)

- Allow the user to indicate the beginning of their route, and at this point place a marker labeled "Start" on the Map. For the remaining duration of the route, allow them to click the Map, a button, etc. to indicate each turn in the route. Label each successive marker at these locations with the number turn that it is (i.e., Turn 1, Turn 2, etc.).

- Allow the user to indicate the end of their route, and at this point place a marker labeled "End" on the Map. At this point, tell the user the total distance traveled for their route. Additionally, place a polyline on the map to show the traveled path.

    - See https://www.movable-type.co.uk/scripts/latlong.html and https://en.wikipedia.org/wiki/Atan2 for information on distance with GPS coordinates.

- The user interface should be to some degree above-and-beyond aesthetically-pleasing for full credit.

- Bugs should be documented and/or error-checked for full credit.

- Lists, loops, variables, and/or procedures should simplify the app's code (if applicable)

- For full credit, incorporate at least one fun/interesting extension. A few possibilities include:

    - Allow the user the ability to view a list of each segment's distance within their route.

    - Incorporate a timer and determine average speed over the course of the route by the end

    - Include an 'Undo' button to remove the most recent marker (and its effect on the route)

    - Allow users to store and in the future access old routes.